

**REMARKS**

Applicant acknowledges the Final Rejection of February 13, 2008 has been withdrawn. Further, it is noted the claims in this application, 15-17, 24 and 25, have been rejected under 35 U.S.C. §103(a) as was stated in the Final Rejection. Thus, the rejection of the claims, with respect to Claims 15-17 and 24, is as being unpatentable over Muller 3,345,745 in view of Lemchen 5,890,892. With respect to Claim 25, it is rejected on Muller in view of Lemchen and further in view of Kesling 5,263,859.

Claim 24 was slightly amended for purposes of clarity by changing "step" to --steps-- in line 5, and by deleting the words "so that" appearing in line 8.

The present invention is directed to an orthodontic appliance (bracket or tube) having a resinous base molded to the body at the factory so that the appliance being shipped to the user is a combination of an archwire receiving body and a resinous base, thereby providing to the user an appliance that can be quickly and easily bonded to a tooth without modification. It is therefore significant that the appliance as shipped from the factory is immediately ready to be used and bonded to a tooth. The significance of utilizing a resinous base is that the appliance can easily be removed from a tooth once it has served its treatment purpose.

Secondly, it is significant that the resinous base is light-permeable because in today's world of orthodontics, appliances are generally bonded to teeth utilizing a light-cure adhesive. Because the base is light-permeable, a curing light can penetrate the base to effectively cure the bonding adhesive in the central area of the base at the tooth surface. As such, a more reliable and secure bond is made between the appliance base and the tooth.

Finally, the combination appliance body and resinous base of the present invention is made by molding the resinous base onto the body of the appliance such that a peripheral lip of the base overlaps the body to provide a reliable and lasting interconnection between the resinous base and the appliance body. This is particularly advantageous during the use of the appliance by a patient in order to prevent failure between the appliance body and the base. Accordingly, it reduces the need to replace an appliance during treatment of a patient, thereby avoiding an interruption of the treatment schedule.

Moreover, a significant advantage of a resinous base is to enhance the ease of removal of the appliance when appliances are to be removed following the appliance treatment phase.

Muller teaches the structuring of a resinous base for the body of an appliance at the chairside of patient treatment and discloses several embodiments. There is no disclosure or suggestion in Muller that an appliance body and the base is made at the factory for shipment to a user. Rather, it is made in the office of the orthodontist at the time of mounting an appliance on a tooth which requires chair time of the orthodontist.

The steps of mounting a bracket to a tooth in Muller, as set forth in Col. 1, lines 70-72, and Col. 2, lines 1-7, include the molding of a plug of plastic material onto one end of the rigid holding brackets, and the conforming of the end face of the plug to the tooth surface followed by cementing the plug to the tooth surface. Thus, Muller does not teach the making of a combination of appliance body and resinous base at the factory.

More specifically, one embodiment is shown in Figs. 1 and 2, wherein the appliance is a button, first temporarily held in place on a tooth by adhesive tape or foil 3 until an epoxy adhesive 4 has hardened. Another embodiment is in Figs. 3 and 4, where a metal element 5 is

adhered to a synthetic resin portion 2. It is noted that in Col. 5, lines 20-21, Fig. 4 is described as a lateral view of Fig. 3 partly in cross section, such is incorrect as Fig. 3 being a frontal view, the element 2 would not be visible at the top and bottom because the element 5 extends vertically in Fig. 4 to cover the opening in the foil 3. Thus, what is shown in Figs. 3 and 4 is not clear.

A further embodiment is shown in Figs. 5 to 10, which show a bracket, and a holding device 11 for a bracket 7 used to mold a plug 16 against a tooth.

Finally, the embodiment of Figs. 11 to 14 shows a complex system including an auxiliary device having plungers 20 and 21 to form a plug about an appliance and mounting the plug and appliance to a tooth.

The Examiner correctly points out that the plug of synthetic material molded onto the body of the appliance in Muller may be transparent, as set forth in Col. 4, lines 54-55. It is clear that the purpose of this transparent resin is for enhancing the aesthetics or cosmetics of a patient, as set forth in Col. 4, line 50. There is no suggestion in Muller that the transparent resin would assist in curing the adhesive employed to mount the appliance on a tooth.

As explained in the remarks of the amendment for this application filed on October 19, 2007, the Applicant has researched the issue of when light-cure adhesive technology was implemented in the practice of orthodontics. The earliest patent found relating to a light-cure adhesive was the Cohl 3,745,653 patent that was filed in 1971, some six years after the filing of the Muller patent. There is no suggestion in Muller that a light-cure adhesive could be used to bond a bracket and base to a tooth. Indeed, Muller depends on a self-polymerizing 2-component adhesive like an epoxy resin for bonding an appliance to a tooth (Col. 3, lines

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44-58). Therefore, Muller cannot be combined with any other reference of a later date to teach the use of a light-cure adhesive for bonding an appliance to a tooth. Muller did not conceive or disclose the use of a light-cure adhesive for bonding appliances to teeth.

Accordingly, Muller does not teach or suggest the appliance of the present invention which is made at the factory for shipment to a user. What Muller does teach is that a base or a bracket can be molded at chairside onto the surface of a tooth.

Similarly, the secondary reference of Lemchen does not teach the appliance of the invention as claimed. Specifically, Lemchen does not teach an appliance with a resinous base as made for shipment to a user for immediate bonding to a tooth. The adhesive base in Lemchen is partially uncured prior to use so that it can conform to a tooth surface after removal from the manufacturer's packaging, as set forth in Col. 2, lines 50-54.

Lemchen admittedly is of a recent enough vintage to embrace the concept of bonding appliances to teeth using a light-cure adhesive. However, it becomes necessary to employ impermissible hindsight to combine the teachings of Lemchen with those of Muller to make obvious the claims of the present invention. It is submitted that only after viewing Applicant's teachings would a person of ordinary skill in the art conclude any of the teachings of Lemchen would be combined with those of Muller.

Accordingly, it is submitted that the rejection of Claims 15-17 and 24 on Muller in view of Lemchen should be withdrawn, and that these claims are patentable over Muller and Lemchen.


Similarly, the rejection of Claim 25 on Muller in view of Lemchen and Kesling should be withdrawn in view of the above discussion on the application of Muller and Lemchen

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against the present invention. The Kesling patent relates to a flexible bonding pad or base that can be applied to orthodontic brackets to facilitate debonding a bracket from a tooth. For reasons given above in connection with the Muller and Lemchen references, it is submitted that the rejection of Claim 25 on Muller, Lemchen and Kesling should be withdrawn, and that Claim 25 is patentable over these references.

An earnest endeavor has been made to place this application in condition for formal allowance, and in the absence of more pertinent prior art, such action is courteously solicited.

Respectfully submitted,

  
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Lloyd L. Zickert  
Reg. No. 17,807

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Lloyd L. Zickert  
79 West Monroe Street  
Chicago, IL 60603  
(312) 236-1888